ANTHROPOMETRY OF THE AMERICAN INDIANS.

At a session of the Berlin Anthropological Society, in May last, Dr. Franz Boas reported the results of numerous measurements of American Indians and half-breeds, which he had carried out. A few of his conclusions may be mentioned.

On the whole, the Indian is rather tall, and the half-breeds slightly taller than the pure blood. The women are 92 to 94 per cent. the height of the male. As usual, the tallest tribes are dwellers in plains. The head-form varies extremely, but is persistent over wide regions, the Mississippi valley being peopled with mesocephalic tribes, the extreme north with dolichocephalic, while others, as the Téné, both north and south, are brachycephalic. There is no general type of native American skull. The facial diameter rarely sinks below 147 mm., and when such is the case foreign blood may be suspected.

The article is furnished with abundant tables and diagrams, and offers a fine example of scientific work.

THE MONUMENTS OF YUCATAN.

The first number of the anthropological series published by the Field Columbian Museum, Chicago, is the 'Archæological Studies among the Ancient Cities of Mexico,' by the curator, William H. Holmes. The first part, which alone has appeared, is devoted to the architectural remains of Yucatan. These were explored by the author in a visit there last winter, which included an inspection of the relics at Mugeres Island, Cozumel, Uxmal, Izamal, Chichen Itza, and some places of less note.

The results fill a volume of 137 pages, abundantly illustrated and rich with accurate observations and careful deductions. Several sketch maps and panoramas of the sites are inserted which give a much clearer notion than can be obtained from verbal descriptions. The analysis of the elements of Mayan architecture are especially original and valuable and impart a peculiar worth to this monograph. The same may be said of the observations on the materials employed, the orientation, the necessity for instruments of precision, the function of the buildings, the dressing of stone, the evolution of the ground plans, stairways and substructures, etc. In fact, the reader will find on almost every page something to catch his attention and to cast new light on the many obscure problems connected with the ancient Mayas.

D. G. Brinton,

SCIENTIFIC NOTES AND NEWS.

A PERMANENT SCIENTIFIC HEAD FOR THE U. S. DEPARTMENT OF AGRICULTURE.

An amendment to the Agricultural appropriation bill has just been sent to Congress providing for a "Director-in-Chief of scientific bureaus and investigations, to serve during good behavior, to have authority to act as Assistant Secretary, and to perform such other duties as the Secretary may direct."

This amendment, which has received the endorsement of the Secretary and Assistant Secretary of Agriculture, is the outgrowth of an effort to secure a permanent non-political organization and administration of the various bureaus and divisions engaged in the scientific work of the Government, and at the same time bring about a more intelligent and more effective coöperation than has been heretofore possible.

The chief promoters of this movement are well-known public-spirited educators and men of science entirely outside of the Government service.

The Department of Agriculture as at present organized comprises a large number of scientific and administrative divisions having for their object the discovery, exploration and development of the agricultural and other natural resources of the country. The scientific divisions are engaged in researches requiring the highest technical skill, and some of them in the solutions of problems requiring long years of preparation and scientific training.

Excluding the Weather Bureau, no less than eight divisions are doing work which in the main is purely scientific, and each of these has its independent laboratory or laboratories. Including the Weather Bureau and the meat inspection service of the Bureau of Animal Industry, 993 of a total of 2,019 employees are engaged chiefly upon scientific and technical subjects, and $1,700,000 of the $2,400,000 appropriated for the Department of Agriculture is expended upon this work. But the greater part of the work of the Weather Bureau and Bureau of Animal Industry, while fundamentally scientific in method and character, is not in the line of original investigation, and therefore may be omitted in the present statement. Still, each of these Bureaus conduct at Washington certain investigations in pure science, the cost of which, added to that of the eight scientific divisions already mentioned, amounts annually to nearly half a million dollars. Nevertheless no coöperative organization or classification of these scientific divisions, except those of the Weather Bureau, has been as yet undertaken.

It would seem a simple business proposition, needing no argument, that this comprehensive and vastly important work, promoting, as it does, the development of almost every resource of our land and every industry of our people, and concerning the food and health of a large part of our population, should have a permanent, broadly educated and experienced scientific head, free from the disquieting influence of politics.

The first, and in some respects the most difficult, step toward the accomplishment of this end was taken when Secretary Morton secured for the Department of Agriculture the protection of the Civil Service, thus putting an end to the terrors of political pressure in filling vacancies in the scientific divisions.

Should the amendment now before Congress become a law—and it is believed the friends of science and education throughout the land will give it their unqualified support—it is by no means improbable that other scientific bureaus of the Government will seek the protection and support provided thereby, and that in the near future we may boast a National Department of Agriculture and Science.

ASTRONOMY.

THE Lick Observatory has just published 'Contributions,' No. 5, a volume of 86 pages octavo, devoted to meteor and sunset phenomena. One of the most interesting papers in the volume is by Prof. Schaeberle, and contains a discussion of a series of meteor observations made simultaneously at Mount Hamilton and at Mount Diablo, forty miles distant. The Mount Hamilton observations were made by Messrs. Colton and Perrine; those at Mount Diablo by Mr. Schaeberle. The formulæ needed for the complete reduction of observations of this kind, including the criterion for determining whether the observations of both stations in any given instance really refer to the same meteor, are fully developed. Nine meteor paths were successfully worked out in this way in August, 1894. The heights of the meteors range from four to fifty-seven miles. Prof. Schaeberle concludes by pointing out that much more reliable methods of observation must be devised, if orbits having any approach to precision are to be secured for meteors. We can only hope that the experiments now in progress at the Yale College Observatory will lead to the possibility of observing these interesting bodies photographically.

WE learn from the last number of the Publications of the Astronomical Society of the Pacific that several important instruments have recently been completed at the works of Mr. Saegmuller in Washington. These include a nine-inch photographic instrument with collimators for the Observatory of Georgetown College, and a four-and-one-half-inch meridian circle for the Catholic University. Numerous other important instruments are in course of construction. We hope this new and very powerful photographic transit instrument will enable F. Hagen and F. Fargis to carry their very promising experiments in the direction of determining right ascensions photographically to a successful conclusion. If it shall prove possible to photograph the collimators with success, there can be little doubt that most important results will flow from the use of this new method.

MESSRS. MACMILLAN & CO. announce that Dr. G. W. Hill's 'Celestial Mechanics' will be

published during the present year. The work will embody the lectures delivered at Columbia College by Dr. Hill, and will appear with the imprint of the Columbia University Press.

H. J.

HARVARD COLLEGE OBSERVATORY, CIRCULAR NO 5.

Wells' Algol Variable.

A MINIMUM of the Algol star, B. D.+17° 4367, occurred, as predicted in Circular No. 4, on the afternoon of January 5, 1896. Through the courtesy of Professor Young, observations were obtained at Princeton by Professor Taylor Reed, with the 23-inch equatorial. It was also observed by Mr. W. M. Reed at Andover. Preparations had been made at this observatory to obtain a series of photographic images of it automatically, each having an exposure of five minutes to observe it photometrically with the 15-inch equatorial, and also visually with the 12 and 6-inch equatorials. Unfortunately, owing to clouds, few observations were obtained, but these serve to show that the star was faint and diminishing in brightness as expected. Similar preparations were made for the next minimum, January 10, but again clouds prevented observation.

The observations so far obtained show that its time of minimum, uncorrected for the velocity of light, can be closely represented by the formula J. D. 2412002.500+4.8064 E. The uncertainty in the period does not exceed a few seconds, and will probably be known within a single second as soon as the form of light curve is determined. For nearly two hours before and after the minimum it is fainter than the twelfth magnitude. It is impossible, at present, to say how much fainter it becomes or whether it disappears entirely. It increases at first very rapidly and then more slowly, attaining its full brightness, magnitude 9.5, about five hours after the minimum. One hundred and thirty photographs indicate that during the four days between the successive minima it does not vary more than a few hundredths of a magnitude. The variation may be explained by assuming that the star revolves around a comparatively dark body and is totally eclipsed by it for two or three hours, the light at minimum, if any, being entirely that of the dark body. The conditions resemble those of U Cephei, which appears to be totally eclipsed by a relatively dark body two and a-half magnitudes fainter than itself, but having a diameter at least one half greater. The variation in light of B. D. +17° 4367 is more rapid than that of any other star hitherto discovered, and as its range is greater than that of any known star of the Algol type, its form of light curve can be determined with corresponding accuracy. U Cephei is second in both these respects.

The New Star in Centaurus.

In circular No. 4 insert 'it' before 'follows' in the ninth line. This word was given correctly in the printer's copy, but was omitted in setting the type. The correction was telegraphed to those astronomers who, it was expected, would use it. The Nova follows the nebula N. G. C. 5253, and is north of it. The nebula is assumed to be C. DM. —31° 10536, magn. 9.5, with which it was originally identified. As seen with a low power the nebula cannot readily be distinguished from a star. Its magnitude on the Cordoba scale by comparison with adjacent stars was estimated by Mr. Wendell as 9.7, and it could hardly have been overlooked in preparing the Cordoba Durchmusterung, in which many adjacent fainter stars are given. The new star could not have been observed at Cordoba unless we assume, first, that it was bright at that time, although invariably too faint to be photographed on fifty nights distributed over six years, and secondly, that the nebula was overlooked at Cordoba while observing fainter objects in the same region. Even if we make these assumptions, the new star still falls in the same class as T Coronæ, which was observed in the northern Durchmusterung several years preceding its appearance as a new star.

The various positions of N. G. C. 5253 for 1875 are as follows:—

Dreyer's New General Catalogue R. A. = $13^h\ 32^m\ 51^s$ Dec. = —31° 0′.2

Cordoba Durchmusterung R. A. = $13^h\ 32^m\ 49^s.6$ Dec. = —31° 0′.3

Plate B 13965 R. A. = $13^h\ 32^m\ 50^s.2$ Dec. = —31° 0′ 23″

Plate B 14072 R. A. = $13^h\ 32^m\ 50^s.0$ Dec. = —31° 0′ 21″

The positions of the Nova derived from these plates differ from each other by only $0^s.1$ in right ascensions and $1''$ in declination. The mean position for 1875 is R. A. $= 13^h\ 32^m\ 51^s.8$ Dec. $= -30°\ 59'\ 58''$. It will be noticed that according to these measures, the Nova follows N. G. C. 5253 by $1^s.7$, and is $24''$ north.

EDWARD C. PICKERING.

JANUARY 31, 1896.

GENERAL.

MR. MORRILL'S bill in the Senate appropriating $250,000 for the erection of an additional building for the U. S. National Museum will be reported favorably by the Committee on Public Buildings and Grounds. The bill provides for a fire-proof building 300 feet square, having two stories and a basement.

THE daily papers contain much discussion regarding a dispatch purporting to come from Irkutsk, Siberia, and stating that Dr Nansen has reached the North Pole, has found land there and is now returning.

THE herbarium bequeathed by the late John H. Redfield to the Philadelphia Academy of Natural Sciences will be sold and the money used for a Redfield fund for the Botanical Department of the Academy.

M. ROUCHÉ has been elected on the second ballot, by 33 votes as compared with 29 cast for M. Lauth, *Membre libre* of the Paris Academy of Sciences. M. Moissan has been elected President of the Paris Chemical Society.

A BILL for the preservation of the Palisades, ceding to the United States jurisdiction over that part of the Palisades which lies in the State of New York, has been passed by the Legislature and will be signed by Gov. Morton.

THE Imperial German Health Bureau has reported that aluminum is especially suitable for cooking utensils, as it does not communicate any poisonous salts such as may arise from the use of copper, tin and lead.

A CABLEGRAM states that Prof. Röntgen was expected to conduct experiments on the X-rays before the German Reichstag, and that the Reichstag would be asked to make an appropriation for further researches. The daily papers continue to publish long accounts of experiments on the Röntgen rays, chiefly noticeable for their repetitions and inaccuracies. It is probable that no scientific advance has been made beyond what is contained in Prof. Röntgen's own paper published in the last number of this journal. It is, however, worth noting that Prof. Röntgen in his paper makes no mention of the possible applications of his discovery to surgery or elsewhere, but lays special weight on the speculation, having no apparent relation to his experiments, that the rays may be longitudinal vibrations in the ether.

Nature states that Mr. F. E. Willey, of the Royal Gardens, Kew, has been appointed Curator of the newly-founded Botanic Station at Sierra Leone. Mr. J. M. Henry has retired from the post of Superintendent of the Baroda State Gardens. He was sent out from Kew in 1867, and after twelve years' service in Madras and Bengal was appointed to Baroda in November, 1879.

THE Prussian Budget recommends the appropriation of $7,500 for the maintenance of a control station for diphtheria serum in connection with the Institute for Infectious Diseases.

THE Bender hygienic laboratory, now being constructed in Albany, will be completed during the present year and will contain every requisite of bacteriological investigations.

A CABLE dispatch states that a large aërolite exploded above the city of Madrid at 9:30 A. M. to-day. There was a vivid glare of light and a loud report. Buildings were shaken and many windows were shattered. According to the officials of the Madrid Observatory the explosion occurred twenty miles above the earth.

THERE is now a bill before the New York Assembly repealing the law compelling the schools to include the study of alcohol and narcotics in conjunction with the studies of physiology and hygiene. The Board of Education of the city of New York has voted to support this bill, and it has the support of the leading philanthropists and educators. The law passed last year by the Legislature of the State of New York and the similar laws in other States are regarded by those best competent to judge as injudicious and injurious to the cause of temperance.

Efforts are now being made to have the Legislature arrange for the permanent continuance of the geological study of the State of Maryland by providing for a State Geological Survey. Prof. William Bullock Clark will be placed in charge.

Prof. H. Marshall Ward, professor of botany in the University of Cambridge, is giving a course of three lectures on 'Some Aspects of Modern Botany' at the Royal Institution. The course began on February 13th.

A copy of Audubon's *Birds of North America* is offered for sale in New York for $1,800. It is said to be unused and in the original binding, while a large part of the edition of 100 copies has had the margins of the plates reduced in size by rebinding.

We learn from the *British Medical Journal* that fire broke out in one of the rooms of the Laboratory of the Edinburgh Royal College of Physicians on the night of January 31st, and resulted in disastrous consequences. The apparatus and specimens in one room were entirely destroyed by fire, and as these specimens had been brought together after the labor of years; the loss is irreparable. Several other rooms and their contents, including the chemical room, were seriously damaged by smoke and water. Had the fire not broken out in a room on the top flat and at an outside wall the results might have been vastly more serious. As it is, much has been destroyed that can never be replaced, even had insurances existed to the full. The work of the laboratory has been greatly disorganized, and some considerable time must elapse before the new buildings between Forrest Road and Bristo street are ready for occupation.

Dr. Barnes has been elected the next President of the British Medical Association, which meets this year at Carlisle. Two addresses are to be given, one in Medicine by Sir Dyce Duckworth, and one in Surgery by Dr. Roderick Maclaren, and there are to be nine Sections, namely: Medicine, Surgery, Obstetrics, Public Health, Psychology, Pathology and Bacteriology, Ophthalmology, Diseases of Children, Medical Ethics.

Prof. Burdon Sanderson has delivered a Friday evening lecture before the Royal Institution on Carl Ludwig and the mechanical physiology with which Ludwig's name is so closely identified. Prof. Sanderson said that the neovitalistic movement was already on the wane, and certainly that if any advance in knowledge is to be made the methods of research and reasoning adopted must be those of the Ludwig school.

The Transactions of the American Microscopical Society, just published, contain a detailed account of the 18th annual meeting held at Cornell University last August, of which a report was given at the time in this journal. The next annual meeting of the Society will be held at Pittsburg, Pa., August 18, 19 and 20, 1896, under the presidency of Dr. A. Clifford Mercer, of Syracuse, New York.

Hon. A. D. White, formerly President of Cornell University, appeared on February 10th before the Senate Committee on a National University. He argued in favor of the plan, saying that in this respect the United Stated government is behind the European states. He contended that instead of weakening other universities, as had been claimed, the establishment of a National institution would strengthen all other seats of learning. It is expected that the committee will report favorably.

Dr. Daniel Denison Slade, lecturer on comparative osteology in Harvard University, and known for his contributions to osteology, zoölogy and botany, died at Chestnut Hill, Mass., on February 11th, aged 71 years.

Mr. G. B. Howes announces in *Nature* for January 23d, the discovery by Mr. J. P. Hill that the Bandicoot, *Perameles obesula*, possesses a true allantoic and highly vascular placenta of a discordal and most probably deciduous type. This, taken in connection with what is known to occur in *Phascolaretus*, weakens the line of demarcation between the marsupials and other mammals, or rather causes a slight overlapping of the two groups.

The contents of the last issue of the *Bulletin of the Johns Hopkins Hospital* are very different from what most people would expect to find in a medical journal. There are three papers read by Prof. William Osler and one read by Mr. W.

B. Platt before the historical club of the hospital, and the address of Prof. W. H. Welch at the opening of the William Pepper laboratory of clinical medicine. The papers are all noteworthy for historical research and literary form. Prof. Osler reviews the life of Thomas Dover, physician and buccaneer, whose career throws curious light on the social conditions and medical practice in England at the beginning of the eighteenth century. In a second paper there is given from private sources an account of the life of an Alabama student, John I. Basset, "whose name was not written on the scroll of fame, but who heard the call and forsook all and followed his ideal." Prof. Osler's third paper is entitled 'John Keats, the Apothecary Poet.' Mr. Platt reviews the work of Johannes Müller as a physiologist and a teacher. Prof. Welch, in his address at Philadelphia, described the evolution of modern scientific laboratories. With the exception of anatomy, laboratories for instruction and research are comparatively recent. Purkinje's physiological laboratory at Breslau was established in 1824, one year earlier than Liebig's famous chemical laboratory at Giessen. Lord Kelvin established a physical laboratory in Glasgow about 1845. The first pathological laboratory was founded by Virschow, in Berlin, in 1856.

THE Division of Botany of the U. S. Department of Agriculture has issued a bulletin by Mr. L. H. Dewey reviewing the legislation undertaken by twenty-five of the States and Territories for the suppression of weeds and giving the essential provisions of a general State weed law.

THE Canadian government proposes to send an expedition to Hudson's Bay next summer to establish customs officers and to further investigate the navigability of Hudson's Straits.

THE position of scientific adviser to the London Trinity House, which has been in abeyance since the resignation of Tyndall, has been revived and has been accepted by Lord Rayleigh.

THE Royal Academy of Sciences of Belgium proposes, as the subject for a prize in 1897, a discussion from a theoretical point of view of the Variation of Latitude, its cause and meaning, together with a criticism of the works of geometers on the subject, from Laplace to the present time. A gold medal valued at 800 fr. will be awarded.

THE *London Times* states that investigations have recently been undertaken by the Marine Biological Association into the contents of certain bays on the south coast of Devon. The bays selected for the investigations were Start and Teignmouth Bays, both of which are closed to trawlers in accordance with a by-law of the Devon Sea Fisheries Committee. The object in view of which the work was begun was to discover the characteristic features of the localities in question in respect to the food fish they contained. Mr. F. B. Stead, the naturalist in charge of these investigations, has conducted trawling experiments in these localities during the months of October to December, and the most important facts ascertained by him are as follows: Of the different species of fish captured in the bays, plaice and dabs are by far the most numerous, and as of these two species the plaice is, from the economic point of view, far the most important, and the large number of competing dabs must probably be regarded as a positive hindrance to the well-being of the plaice, any controversy that may be raised as to the advisibility or otherwise of maintaining the by-law now in force should be solely occupied with the consideration of the question whether the closure of the bays to trawlers is necessary or desirable for the protection of the plaice. It has been further shown that the bays differ markedly from one another in respect to the sizes of the fish they contain. Thus, while half the plaice in Start Bay were found to be over 12½ in. in length, in Teignmouth Bay half the plaice captured were under 10½ in. A similar difference held in the case of the dabs. A preliminary account of these investigations will appear in the ensuing number of the journal of the Association.

UNIVERSITY AND EDUCATIONAL NEWS.

MRS. D. G. ORMSBY, of Milwaukee, has given $25,000 to Lawrence University at Appleton, Wis., to endow the 'D. G. Ormsby professorship of history and political economy,' in memory of the husband; and by the will of the